



Naval Education and
Training Command

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Training Manual
(TRAMAN)

Basic Machines

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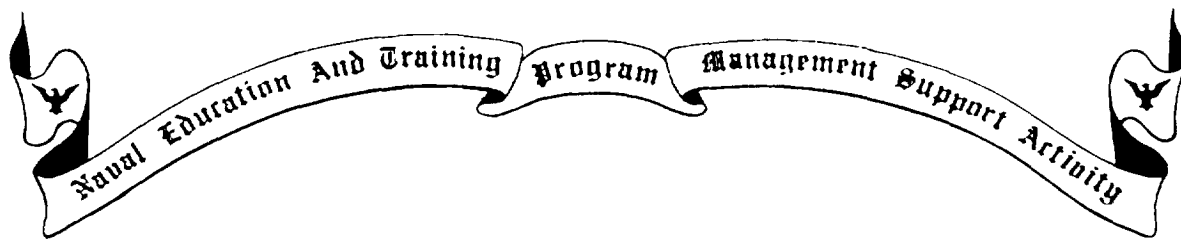


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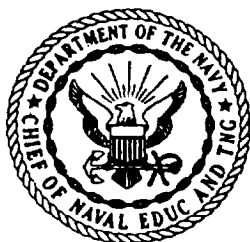
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BASIC MACHINES

NAVEDTRA 12199



*1994 Edition Prepared by
AMHC(AW) Edward L. Prater*

PREFACE

This training manual (TRAMAN) and the accompanying nonresident training course (NRTC) are written as a reference for the enlisted men in the Navy whose duties require knowledge of the fundamentals of machinery.

Beginning with the simplest of machine of the lever the book proceeds with the discussion of block and tackle, wheel and axle, inclined plane, screw and gears. It explains the concept of work and power, and differentiates between the terms “force” and “pressure.” The fundamentals of hydrostatic and hydraulic mechanisms are discussed in detail. The final chapters include several examples of the combination of simple mechanisms to make complex machines.

This TRAMAN and its associated NRTC were prepared by the Naval Education and Training Program Management Support Activity, Pensacola, Florida for the Chief of Naval Education and Training.

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THE UNITED STATES NAVY

GUARDIAN OF OUR COUNTRY

The United States Navy is responsible for maintaining control of the sea and is a ready force on watch at home and overseas, capable of strong action to preserve the peace or of instant offensive action to win in war.

It is upon the maintenance of this control that our country's glorious future depends; the United States Navy exists to make it so.

WE SERVE WITH HONOR

Tradition, valor, and victory are the Navy's heritage from the past. To these may be added dedication, discipline, and vigilance as the watchwords of the present and the future.

At home or on distant stations as we serve with pride, confident in the respect of our country, our shipmates, and our families.

Our responsibilities sober us; our adversities strengthen us.

Service to God and Country is our special privilege. We serve with honor.

THE FUTURE OF THE NAVY

The Navy will always employ new weapons, new techniques, and greater power to protect and defend the United States on the sea, under the sea, and in the air.

Now and in the future, control of the sea gives the United States her greatest advantage for the maintenance of peace and for victory in war.

Mobility, surprise, dispersal, and offensive power are the keynotes of the new Navy. The roots of the Navy lie in a strong belief in the future, in continued dedication to our tasks, and in reflection on our heritage from the past.

Never have our opportunities and our responsibilities been greater.

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